

ACCESSION #: 9906220274

NON-PUBLIC?: N

LICENSEE EVENT REPORT (LER)

FACILITY NAME: South Texas Unit 1 PAGE: 1 OF 3

DOCKET NUMBER: 05000498

TITLE: Automatic Reactor Trip Due to a Reactor Coolant Pump Trip

EVENT DATE: 05/16/1999 LER #: 1999-004-00 REPORT DATE: 06/15/1999

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100%

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:

50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:

NAME: Scott Head TELEPHONE: (512) 972-7136

Licensing Supervisor

COMPONENT FAILURE DESCRIPTION:

CAUSE: X SYSTEM: EA COMPONENT: FU MANUFACTURER: GE

REPORTABLE : no

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On May 16, 1999, Unit 1 was operating in Mode 1 at 100% power. At 0452 hours CDT, Unit 1 experienced an automatic reactor trip due to a low flow condition in Reactor Coolant Loop 3 (C). The low flow condition was caused by the trip of Reactor Coolant Pump 1C due to a low voltage condition in the control circuit on 13.8kv switchgear 1H. The undervoltage condition was caused by the degradation of a fuse in a potential transformer circuit. All control rods fully inserted and all systems functioned as required. The Engineered Safeguards Features System actuated the Auxiliary Feedwater System

and Feedwater Isolation as expected for a reactor trip. Computer data shows that the potential transformer fuse began to degrade at 0335 on the same day and that at 0452 the potential transformer secondary side voltage reached the setpoint for undervoltage relay 27/A1HB-C. Actuation of the relay tripped Reactor Coolant Pump 1C. The degrading fuse opened completely at 0740 on May 16, 1999. Troubleshooting under a work document found that a fuse on the primary side of the potential transformer on the "C" phase had failed. Repair activities included checking accessible connections, verifying Potential Transformer insulation resistance, verifying fuses in the secondary circuit for proper size and functionality, and installing four new fuses in the primary side of the Potential Transformer. Reactor coolant pump 1C was successfully restarted at 1411 on May 16, 1999.

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DESCRIPTION OF THE EVENT:

On May 16, 1999, Unit 1 was operating in Mode 1 at 100% power with no maintenance or surveillance testing activities in progress. Unknown to the Operators, a fuse on the primary side of a potential transformer on 13.8kv bus 1H began to degrade at 0335, causing the voltage on the secondary side of the transformer to drop. At 0452, the potential transformer secondary side voltage reached the setpoint for undervoltage relay 27/A1HB-C.

Actuation of the relay tripped the large electric motors powered from the 1H Auxiliary Bus, Circulating Water Pump 13 and Reactor Coolant Pump 1C, which caused an automatic reactor trip due to a low flow condition in Reactor Coolant Loop 3 (C). All control rods fully inserted and all systems functioned as required. The Engineered Safeguards Features System actuated the Auxiliary Feedwater System and Feedwater Isolation as expected for a reactor trip. The plant was stabilized utilizing the Emergency Operating Procedures as expected. Following the trip, the voltage

indication for bus 1H was abnormal. The degrading fuse opened completely at 0740 on May 16, 1999. Troubleshooting under a work document found that a fuse on the primary side of the potential transformer on the "C" phase had failed. All accessible connections on the potential transformer were inspected and cleaned, correct insulation resistance was verified on the potential transformer, and new fuses were installed in the primary and secondary sides of the circuit. Once these checks were completed, and proper indication was restored to 13.8kv bus 1H, Reactor Coolant Pump 1C was successfully restarted at 1411 on May 16, 1999. This event was caused by equipment failure and there were no human performance issues identified.

CAUSE OF THE EVENT

This event was caused by equipment failure. A fuse degraded causing a high resistance connection, which resulted in a low voltage in the control circuit for the 13.8kv bus. The low voltage caused an undervoltage relay to actuate, tripping the 1C Reactor Coolant Pump. The resulting low flow condition in Reactor Coolant Loop 3 caused an automatic reactor trip.

ANALYSIS OF THE EVENT

Automatic reactor trips and Engineered Safeguards Features actuations are reportable pursuant to 10CFR50.73(a) (2) (iv).

The reactor trip had minimal safety significance. The initiating condition was the loss of 1C Reactor Coolant Pump, which resulted in a low flow condition in Reactor Coolant Loop 3. The Reactor Protection System responded correctly by initiating an automatic reactor trip when it sensed

the low flow condition. All safety systems functioned as designed during the condition and there was no significant risk to the health and safety of the general public or station personnel.

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CORRECTIVE ACTIONS:

The following corrective actions address this event:

1. South Texas Project will replace the 13.8kv Auxiliary Bus potential transformer primary fuses at the next available Refueling Outage on Unit 1 and Unit 2.

2. South Texas Project will initiate a Preventive Maintenance activity to replace potential transformer primary fuses on a regularly scheduled basis.

This action will be completed by July 15, 1999.

3. South Texas Project will evaluate the potential transformer testing procedure for incorporation of fuse resistance measurements by July 15, 1999.

4. South Texas Project will evaluate installation of a blown fuse protecting circuit for the 13.8kv switchgear. This evaluation will be completed by September 2, 1999.

ADDITIONAL INFORMATION:

There have been no Licensee Event Reports submitted by the South Texas Project to the Nuclear Regulatory Commission regarding similar events in the past three years.

STP

Nuclear Operating Company

South Texas Project Electric Generating Station PO Box 289

Wadsworth Texas 77483

June 15, 1999

NOC-AE-000554

File No.: G26

10CFR50.73

STI:30891657

U.S. Nuclear Regulatory Commission

Attention: Document Control Desk

Washington, DC 20555

South Texas Project

Unit 1

Docket No. STN 50-498

Licensee Event Report 99-004

Automatic Reactor Trip Due to a Reactor Coolant Pump Trip

Pursuant to 10CFR50.73, the South Texas Project Nuclear Operating Company

submits the attached Unit 1 Licensee Event Report 99-004 regarding a South

Texas Project Unit 1 automatic reactor trip due to the trip of a reactor

coolant pump. This event did not have an adverse effect on the health and

safety of the public.

Licensee commitments are listed in the Corrective Action section of the

attachment. If there are any questions on this submittal, please contact either Mr. Scott M. Head at (512) 972-7136 or me at (512) 972-7800.

G. L. Parkey

Plant General Manager

WEM

Attachment: LER 99-004 (South Texas, Unit 1)

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NOC-AE-000554

File No.: G26

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cc:

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*** END OF DOCUMENT ***
